

[JP,05-202382,A(1993)]

Japanese (PDF)

File Wrapper Information

FULL CONTENTS CLAIM + DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART
EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS EXAMPLE

[Translation done.]

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Notes:

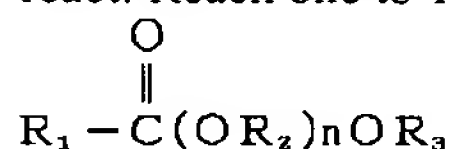
1. Untranslatable words are replaced with asterisks (****).
2. Texts in the figures are not translated and shown as it is.

Translated: 03:46:32 JST 09/22/2007

Dictionary: Last updated 09/07/2007 / Priority: 1. Chemistry / 2. Mechanical engineering / 3. Technical term

FULL CONTENTS**[Claim(s)]**

[Claim 1] (a) A trivalent aluminium ion, gallium ion, an indium ion, Under existence of the catalyst which consists of magnesium oxide by which one or more sorts of the metal ion chosen from a thallium ion, cobalt ion, a scandium ion, a lanthanum ion, and divalent manganese ion were added The nonionic surface active agent shown by ** 1 obtained by having made aliphatic alkylester and alkylene oxide react: Reach one to 10weight %. [Formula 1]



(R₁ : 炭素数 5 ~ 21 のアルキル基
またはアルケニル基

R₂ : 炭素数 2 ~ 4 のアルキレン基

R₃ : 炭素数 1 ~ 4 のアルキル基

n : OR₂ の平均付加モル数を示し、
5 ~ 30 の数)

(b) Calcium capture chelate builder : the detergent composition characterized by containing 1 to 40 weight %.

[Detailed Description of the Invention]**[0001]**

[Industrial Application] This invention is low-foaming property and relates to the detergent composition excellent in detergency.

[0002]

[Description of the Prior Art] An automatic dishwasher is widely used also at ordinary homes from a lack in the conciseness of clearing up after a meal, or the hand roughness by washing etc. For this reason, many proposals about the cleaning agent for automatic dishwashers are made until now. For example, the alkaline cleaning agent containing polyether polyol is indicated by the JP,59-15360,B number. However, although it has the advantage that this polyether polyol containing detergent is low-foaming property, the cleaning effect over detergency, especially oil contamination is inferior.

[0003] On the other hand as a thing for the purpose of the improvement in detergency, what used surface active agents, such as alkoxy ether of lower alcohol, for JP,S58-147500,A is known. However, these surface active agents have inadequate low-foaming property, and when it uses for an automatic dishwasher for home use as a penetrant remover, the blister piece at the time of a rinse produces the

[Translation done.]

problem of being bad. Moreover, the alkali chemicals with which an effect is accepted to oil dirt removing, such as triglyceride, react with the calcium ion in wash water, insoluble matters, such as calcium carbonate, are produced, and since it adheres to tableware and is rough, a feeling of workmanship may fall remarkably. Furthermore, if these cleaning agents are saved by powdered voice, the problem that flowability falls and pellet[solidification and]-izes often arises.

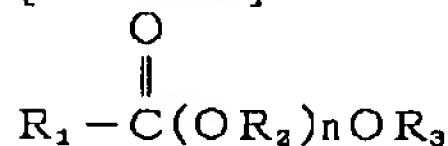
[0004] About the ester type nonionic surface active agent which consists of fatty acid polyoxyalkylene alkyl ether on the other hand The utilization (JP,S59-69135,A) as the solubilizing agent or emulsifier of the utilization (JP,S53-24930,B) as solvents, such as fats and oils, a wax, a varnish, and a coating material, the activity (JAOC56:873 (1979)) as a penetrant, and steroid etc. has been considered.

[0005]
[Problem(s) to be Solved by the Invention] When foaming of this invention at the time of washing is very low, and it excels in detergency and the feeling of workmanship after washing and is considered as the shape of a powder, flowability offers a good detergent composition.

[0006]
[Means for Solving the Problem] The detergent composition of this invention is characterized by containing the following (a) and (b) components.

[0007] (a) A trivalent aluminium ion, gallium ion, an indium ion, Under existence of the catalyst which consists of magnesium oxide by which one or more sorts of the metal ion chosen from a thallium ion, cobalt ion, a scandium ion, a lanthanum ion, and divalent manganese ion were added The nonionic surface active agent shown by ** 2 obtained by having made aliphatic alkylester and alkylene oxide react: 1 to 10 weight %.

[0008]
[Formula 2]



(R₁ : 炭素数 5 ~ 21、好ましくは炭素数 9 ~ 17

のアルキル基またはアルケニル基であり、

直鎖であっても分岐でもよい。

R₂ : 炭素数 2 ~ 4、好ましくは炭素数 2 の

アルキレン基

R₃ : 炭素数 1 ~ 4 のアルキル基

n : OR₂ の平均付加モル数を示し、5 ~ 30 の数、

好ましくは n = 7 ~ 20)

[0009] (b) Calcium capture chelate builder : 1 to 40 weight %.

[0010]
[Embodiment of the Invention] (a) as an ester type nonionic surface active agent of a component aluminum ion (trivalence), Ga ion (trivalence), In ion (trivalence), Tl ion (trivalence), Under existence of the catalyst which consists of magnesium oxide by which one or more sorts of the metal ion chosen from Co ion (trivalence), Sc ion (trivalence), La ion (trivalence), and Mn ion (divalence) were added The condensate acquired by the one-step method to which aliphatic alkylester and alkylene oxide are made to react is used.

[0011] (a) Although a full account is given by the Tokuganhei3-63904 Description, explain briefly the manufacture method of the nonionic surface active agent of a component below. 0.1 to 30weight % of the amount of catalysts of the amount of the metal ion added in magnesium oxide is desirable, and it is 0.5 to 10 weight % more preferably.

[0012] Although the manufacture method of this catalyst is indicated to JP,H1-164437,A, it is desirable to deposit an addition metal ion and to manufacture a catalyst particle from the aqueous solution which contains an addition metal ion like the following methods.

[0013] 1) The sinking-in method : obtain a catalyst particle by evaporation-to-dryness -> grinding -> calcination after adding MgO grains in the aqueous solution containing an addition metal ion like an aluminium nitrate aqueous solution and mixing in it.

Coprecipitation method : 2) A magnesium salt aqueous solution like a magnesium nitrate aqueous solution, The aqueous solution containing an addition metal ion like an aluminium nitrate aqueous solution is mixed, precipitation reagents, such as ammonia, are added to this, magnesium and an addition metal are simultaneously deposited as a hydroxide from an aqueous solution, and a catalyst particle is manufactured by filtration -> desiccation -> grinding -> calcination.

3) Precipitator method : add the aqueous solution containing an addition metal ion, deposit, make the magnesium oxide grain surface carry out the deposition of the hydroxide of an addition metal to the dispersion liquid which distributed magnesium oxide grains, and filter, dry -> calcinate.

[0014] Moreover, when manufacturing a catalyst with precipitation methods, such as the above-mentioned coprecipitation method and a precipitator method, an ion exchange resin can also remove the unnecessary ion (anion) which exists in catalyst slurry after precipitation treatment, and, thereby, the cleaning process after filtration can be skipped or simplified. A reaction can be easily performed under a normal operation procedure and reaction conditions. 80-230 degrees C of reaction temperature is 120-180 degrees C preferably. Moreover, although reaction pressure is based also on reaction temperature, it is 2 - 8atm preferably zero to 20 atm. Although the amount of the catalyst used changes also by the molar ratio of the alkylene oxide and aliphatic alkylester with which a reaction is presented, 0.1 to 20weight % of its amount of aliphatic alkylester is usually desirable, and its 0.5 to 6 weight % is more desirable.

[0015] The reaction of this invention teaches aliphatic alkylester and a catalyst, for example into an autoclave, and after introducing alkylene oxide and making it react under a predetermined temperature and a flow and pressure requirement in nitrogen-gas-atmosphere mind, it can cool and it can be performed by a ** exception carrying out a catalyst. By this reaction, the nonionic surface active agent of the (a) component of this invention is obtained as a condensate with which alkylene oxide entered between the carbon-oxygen bonds of the ester part of aliphatic alkylester $R1COOR3$.

[0016] (a) Inside of the formula showing a component (R2O) That ethylene oxide, propylene oxide, and butylene oxide are independent or having mixed and added may be shown, and, in mixed addition, block addition or random addition is sufficient. (a) As for the ester type nonionic surface active agent of a component, it is desirable to blend one to 40weight % into a detergent composition, and it is 3 to 30 weight % more preferably.

[0017] (b) as a calcium capture chelate builder of a component Zeolite, crystalline sodium silicate, a nitrilotriacetic acid salt, an ethylenediaminetetraacetic acid salt, Citrate, succinate, tripolyphosphate, polyacrylate, hydroxy polyacrylate, Polyacetal carboxylate, acrylic acid and a maleic anhydride copolymer salt, maleic anhydride and a methyl-vinyl-ether copolymer salt, maleic anhydride and an olefine copolymer salt, and acrylic acid and a methacrylic acid copolymer salt are mentioned. Although these may be used independently, or two or more components may be mixed and they may be used, 3 component concomitant use system of crystal sodium silicate / sodium citrate / polyacrylic acid, and a maleic anhydride copolymer salt is especially suitable for them. (b) Blending one to 40weight % is suitable for the calcium capture chelate builder of a component in a detergent composition, and he is 5 to 30 weight % preferably.

[0018] Although the detergent composition of this invention uses the above-mentioned ester type Nonion activator and a chelating agent as an essential ingredient, it can also add the various auxiliary components commonly used by this kind of detergent composition. As such an auxiliary component, nonionic surface active agents other than the above-mentioned component, As surface active agents, such as an anionic surface active agent and a cationic surface active agent, and alkali chemicals, carbonate, Bicarbonate, silicate, etc. can add silica, a calcium silicate, titanium oxide, etc. as a flow improver as enzymes to pans, such as hypochlorite, percarbonate, and a perboric acid salt, as a bleaching agent at perfume and pigments, such as lipase, protease, cellulase, and amylase, and a pan.

[0019] [Effect of the Invention] [according to the detergent composition of this invention] by using together (a) ester type nonionic surface active agent and (b) calcium capture chelate builder With low-foaming property, a rinse is easy, and can prevent the trouble by foaming at the time of washing, it is finished with the detergency which was moreover excellent also when higher hardness water was used, and admiration is obtained. Moreover, also when it is considered as a powder-like constituent, the solidification and pellet-ization at the time of preservation are prevented, and it excels in flowability. Therefore, although it is suitable as a cleaning agent for automatic dishwashers, it can be used for other applications, such as a detergent for garments.

[0020] [Example] The catalyst was manufactured based on the method of the work example 1 of example Tokuganhei3-63904 of manufacture. MgO It is H₂O about 70g. In the dispersion liquid distributed to 525ml, it is aluminum(NO₃) 3.9H₂O. It is H₂O about 30g. The aqueous solution which dissolved in 87g was dropped, aging was performed for 30 minutes, and catalyst slurry was prepared. 263 cc of strong base nature ion exchange resins (SA-20A, Mitsubishi Kasei Corp. make) which pretreated beforehand and were used as OH type were added to this catalyst slurry, it agitated at the room temperature for 1 hour, ion exchange was performed, and NO₃- in slurry was removed.

[0021] Catalyst slurry and an ion exchange resin were separated after ion exchange using the 300-micrometer screen. Subsequently, after carrying out spray drying of this catalyst slurry, it calcinated at 950 degrees C for 1 hour, and the aluminum ion addition MgO catalyst was acquired.

[0022] After it taught 22.5g of the above-mentioned catalysts, and lauric acid methyl ester 750g to the autoclave and nitrogen replaced the inside of an autoclave, temperature up was carried out agitating.

Fruit ** Example 6 7 8 9 Eleven Presentations (Wt%) : 10 Nonionic Surface Active Agent C3 - - - - nonionic surface active agent D- 3 - - - - Nonionic Surface Active Agent E- - 3 - - - nonionic surface active agent F- - - 3 - - nonionic surface active agent G- - - - 3 - nonionic surface active agent H- - - - - 3 sodium citrate 15 15 15 15 15 15 Acrylic Acid and Anhydrous Male Inn 3 3 3 3 3 3 Acid copolymer salt *1 crystallinity stratified silicic acid 2 2 2 2 2 Disodium Sodium Hydrogencarbonate 12 12 12 12 12 12 Sodium Carbonate 8 8 8 8 8 8 Protease 0.2 0.2 0.2 0.2 0.2 0.2 amylase 1.0 1.0 1.0 1.0 1.0 1.0 lipase 0.1 0.1 0.1 0.1 0.1 0.1 Silica 2.0 2.0 2.0 2.0 2.0 2.0 Sodium sulfate BA RA N SU engine performance: Foaming [at the time of washing] O O O O O O detergency 5 5 5 5 5 Feeling 5 of 5 workmanship 5 5 5 Five angles of repose (degree) : Immediately after 40 40 40 40 40 40 One Month after 40 40 40 40 40 40 [0034] Detergent slurry of 45% of solid content was prepared using each component except a nonionic surface active agent, an enzyme, and perfume from the high-bulk-density-detergent-powders presentation shown in the work-example 2 after-mentioned table 4. this detergent slurry -- countercurrent type spray drying -- using the column, with the hot blast temperature of 380 degrees C, it dried so that it might become 5% of moisture, and the spray drying article was obtained. [0035] The mean particle diameter of 350 micrometers, 0.35g/cc bulk density, 45 angles of repose, and the flowability of this spray drying article were also good. Subsequently, the above-mentioned desiccation article, a nonionic surface active agent, and water were introduced into the continuation kneader (Kurimoto make and KRC kneader #2 type), and precise and uniform kneading food was obtained. [0036] The perforated plate (10mm in thickness) with 80 bore diameters of 5mmphi was installed in the outlet of this kneader, and kneading food was made into the about 5mm phix 10mm cylindrical pellet. this pellet was introduced to the crusher (speed mill ND-10 type and Okada -- elaborate -- Co., Ltd.) with double the amount (bulk density) of 15-degree C cooling air. [0037] The crusher has a cutter 15cm in length by four steps of crosses, and rotates at 3000rpm, and the screen consists of a punching metal 360 degrees. Three steps of this crusher were connected continuously and the bore diameter of each stage screen was set to one step:3.5mmphi, two step:2mmphi, and : [the 3rd step of] 1.5mmphi. After separating the grains which passed three steps of crushers from cooling air, perfume is sprayed, it has the presentation shown in the after-mentioned table 4, and the detergent grains of 0.8g/cc of bulk density were obtained. The result was good, when the enzyme was added, it was considered as the detergent composition of this invention and detergency was evaluated to this. [0038] [Table 4] Table 4: Presentation loadings component (wt%) C14 of high bulk density detergent powders (No.1) - C18 alpha-olefin sulfonate 10 Alkylbenzene sulfonates (alkyl groups C10-C14) 10 alpha-sulfo fatty acid (C16-C18) methyl ester salt 10 Beef tallow fatty acid salt 2 C12 - a C13 alcoholic ethoxy rate (EOp=20) 2 Nonyl Phenol Ethoxy Rate (EOp=15) C12 - C13 Alcoholic EO-PO Adduct 2 (EO) p= 15, POp=5 1 Coconut fatty acid JIARUKANORU amide 1 Nonionic surface active agent J2 of this invention Alkylamine oxide (C12-C14) 1 A type zeolite (mean particle diameter of 1.2 micrometers) 20 Sodium carbonate 10 JIS No. 1 specific silicate 10 Sodium sulfite 2 protease (a trade name -- "-- rusting -- NAZE 4.0T") 0.5 Amylase (trade name "Termamyl 60G") 0.2 Lipase (Trade Name "RIPORAZE 30T") 0.3 Polyethylene glycol (Mw=6,000) 2 Fluorescence agent (trade name "Tinopal CBS-X") 0.1 Fluorescence agent (trade name "HOWAI tex SKC") 0.2 Fluorescence agent (trade name "HOWAI tex SA") 0.2 Perfume (passage of the following table 5) 0.2 Salt cake Balance (**) EO is ethylene oxide. PO shows propylene oxide and EOp and POp show each addition mol number. [0039] [Table 5]

表 5 : 香料組成

成 分	配合量 (重量部)
3, 7-ジメチル-1, 6-オクタジエン-3-オール	80
3, 7-ジメチル-1, 6-オクタジエン-3-イル-アセテート	60
3, 7-ジメチル-6-オクテン-1-オール	40
β -フェニルエチルアルコール	50
p-tert-ブチル- α -メチルヒドロシンナミックアルデヒド	70
α -メチル-p-イソプロピルフェニルプロピオンアルデヒド	60
α -n-アミルシンナミックアルデヒド	20
α -n-ヘキシルシンナミックアルデヒド	60
7-アセチル-1, 1, 3, 4, 4, 6-ヘキサメチル テトラヒドロナフタレン	80
3-(5, 5, 6-トリメチル-ノルボルナン-2-イル) シクロヘキサン-1-オール	20
ベルトフィックス	30
2-エチル-4-(2, 2, 3-トリメチル-3-シクロペンテン -1-イル)-2-ブタン-1-オール 10%	10
α , α -ジメチル-p-エチルヒドロシンナミックアルデヒド	40
2, 4-ジメチル-3-シクロヘキセン-1-カルボキシアルデヒド	10
cis-3-ヘキセノール	10
2-trans-3, 7-ジメチル-2, 6-オクタジエン-1-オール	30
n-デシルアルデヒド	5
10-ウンデセン-1-オール	5
メチルノニルアセトアルデヒド	5
4-(4-ヒドロキシ-4-メチルペンチル)-3-シクロヘキセン -1-カルボキシアルデヒド	30
ナフタレン-2-アセチル-1, 2, 3, 4, 6, 7, 8 -オクタヒドロ-2, 3, 8, 8-テトラメチル	30
5-(2-メチレン-6, 6-ジメチル-シクロヘキシル) -4-ペンテン-3-オン	50
2-メトキシ-4-プロベニルフェノール	20
アリルシクロヘキサンプロピオネート	10
6, 7-ジヒドロ-1, 1, 2, 3, 3-ペンタメチル -4(5H)-インダノン	5
p-プロベニルフェニルメチルエーテル	5
メチル-2-アミノベンゾエート	5
レモンオイル	30
オレンジオイル	20
ラバンジンオイル	20
パチュリオイル	10
3, 7-ジメチル-2, 6-オクタジエナール	30
メチルジヒドロジャスモネート	50

[0040] The detergent grains of No.2 - 9 shown in Table 6 were prepared like work-example 3 work example 2, and the detergent composition of this invention was obtained like the work example 2. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 2 with same all was accepted.

[0041]

[Table 6]

表6：洗剤粒子No.2～9〔表中の数値は配合量(重量部)〕

成分		No.							
アニオン	C ₁₂ ～C ₁₈ α-オレフィンスルホン酸塩	15	30	—	—	10	10	10	10
	アルキルベンゼンスルホン酸塩(アルキル基C ₁₀ ～C ₁₈)	15	—	30	—	10	10	10	10
	C ₁₂ ～C ₁₈ アルキル硫酸塩	—	—	—	30	10	—	—	—
	C ₁₂ ～C ₁₈ アルキルエトキシ(EOP=3)硫酸塩	—	—	—	—	—	10	—	—
	α-スルホ脂肪酸(C ₁₂ ～C ₁₈)メチルエステル塩	—	—	—	—	—	—	10	—
ノニオン	C ₁₂ ～C ₁₈ アルキルスルホン酸塩	—	—	—	—	—	—	—	—
	牛脂脂肪酸塩	2	2	2	2	2	2	2	10
	C ₁₂ ～C ₁₈ アルコールエトキシレート(EOP=20)	2	2	2	2	2	2	2	2
	ノニルフェノールエトキシレート(EOP=15)	2	2	2	2	2	2	2	2
	C ₁₂ ～C ₁₈ アルコールEO・PO付加体(EOP=15, P _{OP} =5)	1	1	1	1	1	1	1	1
オニオン	ヤシ脂肪酸ジアリカノールアミド	1	1	1	1	1	1	1	1
	アルキルアミンオキシド(C ₁₂ ～C ₁₈)	1	1	1	1	1	1	1	1
	本発明のノニオン界面活性剤K	3	3	3	3	3	3	3	3
	A型ゼオライト(平均粒径1.2μm)	20	20	20	20	20	20	20	20
	炭酸ナトリウム	10	10	10	10	10	10	10	10
ビルダー	JIS1号珪酸ナトリウム	10	10	10	10	10	10	10	10
酵素	プロテアーゼ(商品名「サビナーゼ4.0T」)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	アミラーゼ(商品名「タマーミル60G」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	リパーゼ(商品名「リポラーゼ30T」)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	ポリエチレングリコール(N _w =6,000)	2	2	2	2	2	2	2	2
	亜硫酸ナトリウム	2	2	2	2	2	2	2	2
その他添加剤	蛍光剤(商品名「チノパール CHS-X」)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	蛍光剤(商品名「ホワイテックス SKC」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	蛍光剤(商品名「ホワイテックス SA」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	香料(実施例2の表3の通り)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	芒硝	5	5	5	5	5	5	5	5

[0042] The detergent grains of No.11 - 16 shown in Table 7 were prepared like work-example 4 work example 2, and the detergent composition of this invention was obtained like the work example 2. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 2 with same all was accepted.

[0043]

[Table 7]

表 7 : 洗剤粒子 No.11~16 (表中の数値は配合量(重量部))

成分		No.	11	12	13	14	15	16
アニオン	C ₁₂ ~C ₁₈ α-オレフィンスルホン酸塩							
	アルキルベンゼンスルホン酸塩(アルキル基 C ₁₀ ~C ₁₄)		10	10	10	10	10	10
	α-スルホ脂肪酸(C ₁₂ ~C ₁₈)メチルエステル塩		10	10	10	10	10	10
	牛脂脂肪酸塩		2	2	2	2	2	2
ノニオン	C ₁₂ ~C ₁₈ アルキルエトキシレート(EOP=20)		5	—	—	—	—	—
	ノニルフェノールエトキシレート(EOP=15)		—	5	—	—	—	—
	C ₁₂ ~C ₁₈ アルキルEOP付加体(EOP=15, POp=5)		—	—	5	—	—	—
	ヤシ脂肪酸ジアルカノールアミド		—	—	—	5	—	—
	シヨ糖脂肪酸(C ₁₂ ~C ₁₈)エステル		—	—	—	—	5	—
	アルキルアミンオキシド(C ₁₂ ~C ₁₈)		—	—	—	—	—	5
	本発明のノニオン界面活性剤C		3	3	3	3	3	3
ビルダー	A型ゼオライト(平均粒径1.2μm)		20	20	20	20	20	20
	炭酸ナトリウム		10	10	10	10	10	10
	JIS1号珪酸ナトリウム		10	10	10	10	10	10
酵素	プロテアーゼ(商品名「サビナーゼ4.0T」)		0.5	0.5	0.5	0.5	0.5	0.5
	アミラーゼ(商品名「ターマミル60G」)		0.2	0.2	0.2	0.2	0.2	0.2
その他の添加剤	リパーゼ(商品名「リポラーゼ30T」)		0.3	0.3	0.3	0.3	0.3	0.3
	ポリエチレングリコール(MW=6,000)		2	2	2	2	2	2
	亜硫酸ナトリウム		2	2	2	2	2	2
	蛍光剤(商品名「チノパール CBS-X」)		0.1	0.1	0.1	0.1	0.1	0.1
	蛍光剤(商品名「ホワイテックス SKC」)		0.2	0.2	0.2	0.2	0.2	0.2
	蛍光剤(商品名「ホワイテックス SA」)		0.2	0.2	0.2	0.2	0.2	0.2
	香料(実施例2の表3の通り)		0.2	0.2	0.2	0.2	0.2	0.2
芒硝			5	5	5	5	5	5

[0044] How to spray the Nonion activator by a ** form mixer, and add and carry out agitation granulation of the fines zeolite 2% to the spray drying article obtained like work-example 5 work example 2, The detergent grains of No.21 - 30 shown in Table 8 were prepared, and the detergent composition of 0.75g/cc of bulk density of this invention was obtained like the work example 2. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 2 with same all was accepted.

[0045]

[Table 8]

表 8 : 洗剤粒子 No. 21 ~ 30 (表中の数値は配合量(重量部))

		成 分										No.
		21	22	23	24	25	26	27	28	29	30	
ア ニ オ ン	C ₁₀ ～C ₁₈ α-オレフィンスルホン酸塩											
	アルキルベンゼンスルホン酸塩(アルキル基C ₁₀ ～C ₁₄)	10	10	10	10	10	10	10	10	10	10	
	α-スルホ脂肪酸(C ₁₀ ～C ₁₈)メチルエステル塩	10	10	10	10	10	10	10	10	10	10	
	牛脂脂肪酸塩	2	2	2	2	2	2	2	2	2	2	
	C ₁₂ ～C ₁₈ アルキルエトキシレート(EOP=20)	2	2	2	2	2	2	2	2	2	2	
ノ ニ オ ン	ノニルフェノールエトキシレート(EOP=15)	2	2	2	2	2	2	2	2	2	2	
	C ₁₂ ～C ₁₈ アルキルEO・PO付加体(EOP=15,POP=5)	1	1	1	1	1	1	1	1	1	1	
	ヤシ脂肪酸ジアルカールアミド	1	1	1	1	1	1	1	1	1	1	
	アルキルアミンオキシド(C ₁₀ ～C ₁₄)	1	1	1	1	1	1	1	1	1	1	
	本発明のノニオン界面活性剤D	3	3	3	3	3	3	3	3	3	3	
ビ ル ダ ー	A型ゼオライト(平均粒径1.2μm)	20	10	10	10	10	10	10	10	10	20	
	クエン酸ナトリウム	—	10	—	—	—	—	—	—	—	—	
	ニトリトリ酢酸3ナトリウム	—	—	10	—	—	—	—	—	—	—	
	エチレンジアミン4酢酸4ナトリウム	—	—	—	10	—	—	—	—	—	—	
	ヒドロキシエタンジホスホン酸ナトリウム	—	—	—	—	10	—	—	—	—	—	
ゲ ー ル	ポリアクリル酸ナトリウム(M _w =5,000)	—	—	—	—	—	10	—	—	—	—	
	マレイン酸/エチレン共重合体(M _w =10,000)	—	—	—	—	—	—	10	—	—	—	
	ヒドロキシポリアクリル酸ナトリウム(M _w =10,000)	—	—	—	—	—	—	—	10	—	—	
	α-スルホ脂肪酸(C ₁₀ ～C ₁₈)ジナトリウム	—	—	—	—	—	—	—	—	10	—	
	炭酸ナトリウム	10	10	10	10	10	10	10	10	10	5	
酵 素	JIS1号珪酸ナトリウム	10	10	10	10	10	10	10	10	10	10	
	セスキ炭酸ナトリウム	—	—	—	—	—	—	—	—	—	5	
	プロテアーゼ(商品名「サビナーゼ4.0T」)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	アミラーゼ(商品名「ターマミル60G」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	リパーゼ(商品名「リポラーゼ30T」)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
そ の 他	ポリエチレングリコール(M _w =6,000)	2	2	2	2	2	2	2	2	2	2	
	重碳酸ナトリウム	2	2	2	2	2	2	2	2	2	2	
	蛍光剤(商品名「チノパール CHS-X」)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
	蛍光剤(商品名「ホワイテックス SRC」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	蛍光剤(商品名「ホワイテックス SA」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
加 剤	香料(実施例2の表3の通り)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
		5	5	5	5	5	5	5	5	5	5	
	芒硝											

[0046] The detergent grains of No.31 - 39 shown in Table 9 were prepared like work-example 6 work example 2, and the detergent composition of this invention was obtained like the work example 2. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 2 with same all was accepted.

[0047]

[Table 9]

表9：洗剤粒子No.31～39〔表中の数値は配合量(重量部)〕

成分				No.	31	32	33	34	35	36	37	38	39
アニオン	C ₁₄ ～C ₁₈ α-オレフィンスルホン酸塩				10	10	10	10	10	10	10	10	10
	アルキルベンゼンスルホン酸塩(アルキル基C ₁₀ ～C ₁₄)				10	10	10	10	10	10	10	10	
	α-スルホ脂肪酸(C ₁₂ ～C ₁₈)メチルエステル塩				10	10	10	10	10	10	10	10	
	牛脂脂肪酸塩				2	2	2	2	2	2	2	2	
	C ₁₂ ～C ₁₈ アルキルエトキシレート(EOP=20)				2	2	2	2	2	2	2	2	
ノニオン	ノニルフェノールエトキシレート(EOP=15)				2	2	2	2	2	2	2	2	
	C ₁₂ ～C ₁₈ アルキルEOP付加体(EOP=15,POP=5)				1	1	1	1	1	1	1	1	
	ヤシ脂肪酸ジアルカノールアミド				1	1	1	1	1	1	1	1	
	アルキルアミンオキシド(C ₁₂ ～C ₁₄)				1	1	1	1	1	1	1	1	
	本発明のノニオン界面活性剤B				5	5	5	5	5	5	5	5	
ビニル	A型ゼオライト(平均粒径1.2μm)				20	20	20	20	20	20	20	20	
	炭酸ナトリウム				10	10	10	10	10	10	10	10	
	JIS1号珪酸ナトリウム				10	10	10	10	10	10	10	10	
	過炭酸ナトリウム				10	—	5	10	10	10	—	—	
	過硫酸ナトリウム				—	10	5	—	—	—	10	10	
漂白剤	過硫酸ナトリウム(商品名「オキシソ」)				—	—	4	—	—	—	—	—	
	テトラアセチルエチレンジアミン				—	—	—	3	—	—	3	—	
	テトラメチルピペリジン塩酸塩				—	—	—	—	3	—	—	—	
	イソノナノイルオキシベンゼンスルホン酸塩				—	—	—	—	—	3	—	3	
	プロテアーゼ(商品名「サビナーゼ4.0T」)				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
酵素	アミラーゼ(商品名「ターマミル60G」)				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	リパーゼ(商品名「リポラーゼ30T」)				0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
	ポリエチレングリコール(M _w =6,000)				2	2	2	2	2	2	2	2	
	重碳酸ナトリウム				2	2	2	2	2	2	2	2	
	蛍光剤(商品名「チノパール CBS-X」)				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
その他	蛍光剤(商品名「ホワイテックス SRG」)				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	蛍光剤(商品名「ホワイテックス SA」)				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	香料(実施例2の表3の通り)				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	芒硝				5	5	5	5	5	5	5	5	
					—	—	—	—	—	—	—	—	

[0048] The detergent grains of No.41 - 44 shown in Table 10 were prepared like work-example 7 work example 2, and the detergent composition of this invention was obtained. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 2 with same all was accepted. [0049]

[Table 10]

表 10 : 洗剤粒子No.41~44 (表中の数値は配合量(重量部))

成分		No.	41	42	43	44
アニオン	C ₁₂ ~C ₁₈ α-オレフィンスルホン酸塩		10	10	10	10
	アルキルベンゼンスルホン酸塩(アルキル基 C ₁₀ ~C ₁₄)		10	10	10	10
	α-スルホ脂肪酸(C ₁₀ ~C ₁₈)メチルエステル塩		10	10	10	10
	牛脂脂肪酸塩		2	2	2	2
ノニオン	C ₁₂ ~C ₁₈ アルコールエトキシレート(EOP=20)		2	2	2	2
	ノニルフェノールエトキシレート(EOP=15)		2	2	2	2
	C ₁₂ ~C ₁₈ アルコールEO・PO付加体(EOP=15,POP=5)		1	1	1	1
	ヤシ脂肪酸ジアルカノールアミド		1	1	1	1
	アルキルアミンオキシド(C ₁₂ ~C ₁₈)		1	1	1	1
	本発明のノニオン界面活性剤F		3	3	3	3
ビルダー	A型ゼオライト(平均粒径1.2μm)		20	20	20	20
	炭酸ナトリウム		10	10	10	10
	JIS1号珪酸ナトリウム		10	10	10	10
酵素	プロテアーゼ(商品名「サビナーゼ4.0T」)		0.5	0.5	0.5	0.5
	アミラーゼ(商品名「ターマミル60G」)		—	0.5	—	—
	セルラーゼ(商品名「セルザイムSP-227」)		—	—	0.5	—
	リパーゼ(商品名「リポラーゼ30T」)		—	—	—	0.5
その他添加剤	ポリエチレングリコール(Mw=6,000)		2	2	2	2
	亜硫酸ナトリウム		2	2	2	2
	蛍光剤(商品名「チノパール CBS-X」)		0.1	0.1	0.1	0.1
	蛍光剤(商品名「ホワイテックス SKC」)		0.2	0.2	0.2	0.2
	蛍光剤(商品名「ホワイテックス SA」)		0.2	0.2	0.2	0.2
	香料(実施例2の表3の通り)		0.2	0.2	0.2	0.2
	芒硝		5	5	5	5

[0050] preparing the detergent grains of No.51 - 58 shown in Table 11 like work-example 8 work example 1, and receiving detergent grains in SKS-6 (the Hoechst A.G. make, crystalline stratified sodium silicate) -- respectively -- 5 weight % -- or it added 10weight % and the detergent composition of this invention was obtained. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 2 with same all was accepted.

[0051]

[Table 11]

重量部)		No.	51	52	53	54	55	56	57	58
α-スルホ脂肪酸塩	C ₁₂ ~C ₁₈		10	10	10	10	10	10	10	10
			10	10	10	10	10	10	10	10
			10	10	10	10	10	10	10	10
			2	2	2	2	2	2	2	2
ノニオン	C ₁₂ ~C ₁₈ アルコールEO・PO付加体(EOP=15,POP=5)		2	2	2	2	2	2	2	2
			2	2	2	2	2	2	2	2
			2	2	2	2	2	2	2	2
			2	2	2	2	2	2	2	2
ビルダー	A型ゼオライト(平均粒径1.2μm)		1	1	1	1	1	1	1	1
			1	1	1	1	1	1	1	1
			1	1	1	1	1	1	1	1
			3	3	3	3	3	3	3	3
酵素	プロテアーゼ(商品名「サビナーゼ4.0T」)		20	20	20	20	20	20	20	20
			10	10	10	10	10	10	10	10
			10	10	10	10	10	10	10	10
			10	10	10	10	10	10	10	10
その他添加剤	亜硫酸ナトリウム		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
			—	—	—	—	—	—	—	—
香料	チノパール CBS-X		2	2	2	2	2	2	2	2
			—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—
蛍光剤	ホワイテックス SKC		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
芒硝			5	5	5	5	5	5	5	5
			—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—

表 11 : 洗剤粒子 No.51 ~ 58 (表中の数値は配合量(重量成分))	
ア ニ オ ン	C ₁₂ ~ C ₁₈ α-オレフィンスルホン酸塩
	アルキルベンゼンスルホン酸塩(アルキル基 C ₁₀ ~ C ₁₈)
ノ ニ オ ン	α-スルホ脂肪酸(C ₁₂ ~ C ₁₈)メチルエステル塩
	牛脂脂肪酸塩
ビ ル ダ ー	C ₁₂ ~ C ₁₈ アルコールエトキシレート (EOP=20)
	ノニルフエノールエトキシレート (EOP=15)
酵 素	C ₁₂ ~ C ₁₈ アルコール EO-PO 付加体 (EOP=15, POp=5)
	ヤシ脂肪酸ジアルカールアミド
そ の 他	アルキルアミンオキシド (C ₁₂ ~ C ₁₈)
	本発明のノニオン界面活性剤 G
加 剤	A 型ゼオライト (平均粒径 1.2 μm)
	炭酸ナトリウム
加 剤	JIS 1 号珪酸ナトリウム
	プロテアーゼ (商品名「サビナーゼ 4.0T」)
加 剤	アミラーゼ (商品名「ターマミル 60G」)
	リパーゼ (商品名「リポラーゼ 30T」)
加 剤	ポリエチレングリコール (Mw=6,000)
	界面活性剤
加 剤	カルボキシメチルセルロース
	ポリビニルアルコール (Mw=20,000)
加 剤	パラトールスルホン酸塩
	ジ硬化牛脂アルキルジメチルアミンモノウムクロリド
加 剤	スメクタイト (商品名「イェローストーン」)
	蛍光剤 (商品名「チノパール CBS-X」)
加 剤	蛍光剤 (商品名「ホワイテックス SKC」)
	蛍光剤 (商品名「ホワイテックス SA」)
加 剤	香料 (実施例 2 の表 3 の通り)
	芒硝

[0052] Detergent slurry of 45% of solid content was prepared using each component excluding an enzyme from the spray drying detergent grain presentation shown in work-example 9 table 12. this detergent slurry -- countercurrent type spray drying -- using the column, with the hot blast temperature of 380 degrees C, it dried so that it might become 5% of moisture, and spray drying detergent grains were obtained.

[0053] The mean particle diameter of 350 micrometers, 0.35g/cc bulk density, 45 angles of repose, and the flowability of this spray drying detergent grain were also good. When the enzyme was added to this, it was considered as the detergent composition of this invention and detergency was evaluated, the outstanding washing engine performance was shown.

[0054]
[Table 12]
Table 12: Presentation loadings component (wt%) C14 of detergent grains (No.1) - C18 alpha-olefin sulfonate 10 Alkylbenzene sulfonates (alkyl groups C10-C14) 5 alpha-sulfo fatty acid (C16-C18) methyl ester salt 5 Beef tallow fatty acid salt 2 C12 - a C13 alcoholic ethoxy rate (EOP=20) 2 Nonyl Phenol Ethoxy Rate (EOP=15) 1 C12 - C13 Alcoholic EO-PO Adduct (EOP=15, POp=5) 1 Nonionic surface active agent A2 of this invention A type zeolite (mean particle diameter of 1.2 micrometers) 15 sodium carbonate 5 JIS No. 1 specific silicate 10 Sodium sulfite 1 Protease (a trade name -- "-- rusting -- NAZE 4.0T") 0.3 Amylase (trade name "Termamyl 60G") 0.1 [cellulase (trade name "cell ZAIMU SP-227")] 0.1 Lipase (Trade Name "RIPORAZE 30T") 0.3 Polyethylene Glycol (Mw=6,000) 1 Fluorescence agent (trade name "Tinopal CBS-X") 0.1 Fluorescence agent (trade name "HOWAI tex SKC") 0.2 Fluorescence agent (trade name "HOWAI tex SA") 0.2 Perfume (passage of Table 5 of a work example 2) 0.2 Salt cake Balance [0055] The detergent grains of No.2 - 8 shown in Table 13 were prepared like work-example 10 work example 9, and the detergent composition of this invention was obtained. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 9 with same all was accepted.

[0056]
[Table 13]

表13：洗剤粒子No.2～8（表中の数値は配合量(重量%)）

成 分		No.	2	3	4	5	6	7	8
ア ニ オ ン	C ₁₄ ～C ₁₈ α-オレフィンスルホン酸塩		10	10	10	10	10	10	10
	アルキルベンゼンスルホン酸塩(アルキル基C ₁₀ ～C ₁₄)		10	5	5	5	5	5	5
	C ₁₂ ～C ₁₆ アルキル硫酸塩		—	5	—	—	—	—	—
	C ₁₂ ～C ₁₆ アルキルエトキシ(EOP=3)硫酸塩		—	—	5	—	—	—	—
	α-スルホ脂肪酸(C ₁₂ ～C ₁₆)メチルエステル塩		—	—	—	—	5	5	5
	C ₁₂ ～C ₁₄ アルキルスルホン酸塩		—	—	—	5	—	—	—
ノ ニ オ ン	牛脂脂肪酸塩		2	2	2	2	2	2	2
	C ₁₂ ～C ₁₄ アルコールエトキシレート(EOP=20)		2	2	2	2	2	—	—
	ノニルフエノールエトキシレート(EOP=15)		1	1	1	1	—	2	—
	C ₁₂ ～C ₁₄ アルコールEO・PO付加体(EOP=15,POp=5)		1	1	1	1	—	—	2
	本発明のノニオン界面活性剤H		3	3	3	3	3	3	3
	A型ゼオライト(平均粒径1.2μm)		15	15	15	15	15	15	15
ビ ル ダ ー	炭酸ナトリウム		5	5	5	5	5	5	5
	JIS1号珪酸ナトリウム		10	10	10	10	10	10	10
酵 素	プロテアーゼ(商品名「サビナーゼ4.0T」)		0.3	0.3	0.3	0.3	0.3	0.3	0.3
	アミラーゼ(商品名「ターマミル60G」)		0.1	0.1	0.1	0.1	0.1	0.1	0.1
	セルラーゼ(商品名「セルザイムSP-227」)		0.1	0.1	0.1	0.1	0.1	0.1	0.1
	リパーゼ(商品名「リポラーゼ30T」)		0.3	0.3	0.3	0.3	0.3	0.3	0.3
	ポリエチレングリコール(N _w =6,000)		1	1	1	1	1	1	1
	珪酸ナトリウム		1	1	1	1	1	1	1
そ の 他 添 加 剤	蛍光剤(商品名「チノパール GBS-X」)		0.1	0.1	0.1	0.1	0.1	0.1	0.1
	蛍光剤(商品名「ホワイテックス SKC」)		0.2	0.2	0.2	0.2	0.2	0.2	0.2
	蛍光剤(商品名「ホワイテックス SA」)		0.2	0.2	0.2	0.2	0.2	0.2	0.2
	香料(実施例2の表3の通り)		0.1	0.1	0.1	0.1	0.1	0.1	0.1
	芒硝								

[0057] The detergent grains of No.9 - 21 shown in Table 14 were prepared like work-example 11 work example 9, and the detergent composition of this invention was obtained. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 9 with same all was accepted.

[0058]

[Table 14]

表14：洗剤粒子No. 9～21〔表中の数値は配合量(重量%)〕

	成分	No.	ス																	
			9	10	11	12	13	14	15	16	17	18	19	20	21					
ア ニ オ ン	C ₁₂ ~C ₁₈ α-オレフィンスルホン酸塩	10	10	10	10	10	10	10	10	10	10	10	10	10	10					
	アルキルベンゼンスルホン酸塩(アルキル基C ₁₀ ~C ₁₄)	5	5	5	5	5	5	5	5	5	5	5	5	5	5					
	α-スルホ脂肪酸(C ₁₂ ~C ₁₈)メチルエステル塩	5	5	5	5	5	5	5	5	5	5	5	5	5	5					
	牛脂脂肪酸塩	2	2	2	2	2	2	2	2	2	2	2	2	2	2					
	C ₁₂ ~C ₁₈ アルコールエチンレート(EQp=20)	2	2	2	2	2	2	2	2	2	2	2	2	2	2					
ニ オ ン	ノニルフェノールエチンレート(EQp=15)	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
	C ₁₂ ~C ₁₈ アルコールEO・PO付加体(EQp=15, PQp=5)	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
	本発明のノニオン界面活性剤L	3	3	3	3	3	3	3	3	3	3	3	3	3	3					
	A型ゼオライト(平均粒径1.2μm)	15	10	10	10	10	10	10	10	15	15	15	15	15	15					
	クエン酸ナトリウム	-	-	5	-	-	-	-	-	-	-	-	-	-	-					
ビ ル ダ ー	ニトリトリ酢酸3ナトリウム	-	-	-	5	-	-	-	-	-	-	-	-	-	-					
	エチレンジアミン4酢酸4ナトリウム	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
	ポリアクリル酸ナトリウム(Nw=5,000)	-	-	-	-	5	-	-	-	-	-	-	-	-	-					
	マレイン酸/エチレンジアミン重合体(Nw=10,000)	-	-	-	-	-	5	-	-	-	-	-	-	-	-					
	α-スルホ脂肪酸(C ₁₂ ~C ₁₈)ジナトリウム	-	-	-	-	-	-	5	-	-	-	-	-	-	-					
漂 白 剤	硫酸ナトリウム	5	5	5	5	5	5	5	5	5	5	5	5	5	5					
	JIS1号珪酸ナトリウム	10	10	10	10	10	10	10	10	10	10	10	10	10	10					
	過炭酸ナトリウム	-	-	-	-	-	-	-	-	7	-	5	7	-	-					
	過燐酸ナトリウム	-	-	-	-	-	-	-	-	-	-	5	-	-	-					
	テトラアセチルエチレンジアミン	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
酵 素	テトラメチルピペリジン塩酸塩	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
	ブロテアーゼ(商品名「サビナーゼ4.0T」)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
	アミラーゼ(商品名「ターマミル60G」)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1					
	セルラーゼ(商品名「セルザイムSP-227」)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1					
	リパーゼ(商品名「リボラーゼ30T」)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
そ の 他 添 加 剤	ポリエチレングリコール(Nw=6,000)	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
	亜硫酸ナトリウム	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
	蛍光剤(商品名「チノバール CBS-X」)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1					
	蛍光剤(商品名「ホワイテックス SK」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2					
	香料(実施例2の表3の通り)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2					
芒硝			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1					

[0059] preparing the detergent grains of No.22 - 31 shown in Table 15 like work-example 12 work example 9, and receiving detergent grains in an enzyme and SKS-6 (the Hoechst A.G. make, crystalline stratified sodium silicate) -- respectively -- 5 weight % -- or it added 10weight % and the detergent composition of this invention was obtained. When the washing engine performance of these detergent compositions was evaluated, the outstanding detergency as a work example 9 with same all was accepted.

[0060]

[Table 15]

表15：洗剤粒子No.22～31（表中の数値は配合量(重量%)）

成分		No.	22	23	24	25	26	27	28	29	30	31
A		C ₁₂ ～C ₁₈ α-オレフィンスルホン酸塩	10	10	10	10	10	10	10	10	10	10
ニ		アルキルベンゼンスルホン酸塩(アルキル基C ₁₀ ～C ₁₄)	5	5	5	5	5	5	5	5	5	5
オ		α-スルホ脂肪酸(C ₁₀ ～C ₁₈)メチルエステル塩	5	5	5	5	5	5	5	5	5	5
ン		牛脂脂肪酸塩	2	2	2	2	2	2	2	2	2	2
ノ		C ₁₂ ～C ₁₈ アルコールエトキシレート(EOP=20)	2	2	2	2	2	2	2	2	2	2
ニ		ノニルフェノールエトキシレート(EOP=15)	1	1	1	1	1	1	1	1	1	1
オ		C ₁₂ ～C ₁₈ アルコールEO・PO付加体(EOP=15,POP=5)	1	1	1	1	1	1	1	1	1	1
ン		本発明のノニオン界面活性剤M	2	2	2	2	2	2	2	2	2	2
ビ		A型ゼオライト(平均粒径1.2μm)	15	15	15	15	15	15	15	15	15	15
ル		炭酸ナトリウム	5	5	5	5	5	5	5	5	5	5
ダ		JIS1号珪酸ナトリウム	10	10	10	10	10	10	10	10	10	10
イ												
洗剤	酵素	プロテアーゼ(商品名「サビナーゼ4.0T」)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		アミラーゼ(商品名「タマミル60G」)	-	0.3	-	-	0.1	0.1	0.1	0.1	0.1	0.1
		セルラーゼ(商品名「セルザイムSP-227」)	-	-	0.3	-	0.1	0.1	0.1	0.1	0.1	0.1
		リパーゼ(商品名「リポラーゼ30T」)	-	-	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		ポリエチレングリコール(Mn=6,000)	1	1	1	1	-	1	-	-	-	-
		亜硫酸ナトリウム	1	1	1	1	1	1	1	1	1	1
		カルボキシメチルセルロース	-	-	-	-	-	-	1	-	-	-
		パラトリエンスルホン酸塩	-	-	-	-	-	-	-	1	-	-
		ジ硬化牛脂アルキルジメチルアミンモニウムクロリド	-	-	-	-	-	-	-	-	5	-
		スメクタイト(商品名「イエローストーン」)	-	-	-	-	-	-	-	-	-	5
添加剤	蛍光剤	(商品名「チノパール CBS-X」)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	蛍光剤	(商品名「ホワイテックス SKC」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	蛍光剤	(商品名「ホワイテックス SA」)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	香料(実施例2の表3の通り)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
芒硝												

[Translation done.]